

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference
17163

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2004/010639

International filing date (day/month/year)
27.07.2004

Priority date (day/month/year)
30.07.2003

International Patent Classification (IPC) or both national classification and IPC

Applicant
BHPH COMPANY LIMITED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/010639

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2004/010639

| Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | | |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|
| 1. Statement | | | |
| Novelty (N) | Claims | 1 - 9 | YES |
| | Claims | _____ | NO |
| Inventive step (IS) | Claims | _____ | YES |
| | Claims | 1 - 9 | NO |
| Industrial applicability (IA) | Claims | 1 - 9 | YES |
| | Claims | _____ | NO |

2. Citations and explanations:

- Document 1: JP 2001-333766 A (PHPH Company, Limited) 04 December 2001
(Family: none)
- Document 2: JP 2000-316567 A (Societe des Produits Nestle, Societe Anonyme) 21
November 2000 & EP 1048215 A1 & US 6521443 B1
- Document 3: JP 2000-279166 A (Societe des Produits Nestle, Societe Anonyme) 10
October 2000 & EP 1038951 A1 & US 6340585 B1
- Document 4: JP 2000-189105 A (Takanashi Nyugyo Co., Ltd.) 11 July 2000
(Family: none)
- Document 5: JP 52-102419 A (Seiken Kai Foundation) 27 August 1977 & DE
2738652 A & FR 2400901 A & GB 1585863 A & US 4314995 A
- Document 6: JP 2003-171292 A (Biofermin Seiyaku Co., Ltd.) 17 June 2003
(Family: none)

[Claims 1-6]

The inventions in claims 1-6 do not appear to involve an inventive step based on documents 1-5.

Document 1 describes a health-promoting agent, a preventive agent for infection, or a therapeutic agent for infection wherein the main ingredients are an antibiotic substance produced by *Lactobacillus casei* and *Lactobacillus casei* for humans, animals, and plants and describes anaerobic culture at 37°C of *Lactobacillus casei*, as well as media containing tryptophan, lysine, leucine, cystine, and vitamin C.

Document 2 describes *Lactobacillus* genus growth media that includes at least 4 amino acids and describes the addition of ascorbic acid, as well as a final pH of 3.8 through anaerobic culturing when microorganisms of the *Lactobacillus* genus are cultured in said media (table 1).

Document 3 describes *Lactobacillus* genus growth media that includes more than 1 type of amino acid and ascorbic acid and describes anaerobic culture at 37°C as well as culture of *Lactobacillus casei* as microorganisms of the *Lactobacillus* genus.

Document 4 describes *Lactobacillus casei* that possess resistance to bile acid. Document 5 describes lactic acid bacilli that produce an antibiotic substance and that possess resistance to bile acid and describes the addition of amino acid to media.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V

Because the production of an antibiotic substance by *Lactobacillus casei* that is an organism belonging to the lactic acid bacteria and *Lactobacillus* genus, the culture in media containing amino acids, the anaerobic culture at 37°C, the possession of resistance to bile acid, the acidification of media after culturing, and the addition of ascorbic acid to media are well known from documents 1-5, culture can be performed under these culture conditions, and screening and obtaining a bacterial strain that belong to *Lactobacillus casei* that has great growth potential for having each property and antibiotic substance production potential, as well as use of the obtained microbial strain as a preventive agent for infection are regarded as easily conceivable.

[Claims 7-9]

The inventions in claims 7-9 do not appear to involve an inventive step based on documents 1-6.

Document 6 describes the use of *Lactobacillus casei* as a preventive or therapeutic agent for periodontal disease and as a preventive or therapeutic agent for halitosis.

Consequently, the isolation of a microbial strain effective for the prevention/therapy of periodontal disease in particular from microbial strains that belong to the *Lactobacillus casei* genus and the use thereof in a preventive/therapeutic agent for periodontal disease pose no difficulty.